Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Withdrawn) A thin wall singulation saw blade for cutting hard materials, comprising: a plated nickel matrix for encapsulating large diamonds and small diamonds in the same matrix, said nickel matrix having points of the large diamonds protruding from side walls beyond the small diamonds, and said small diamonds being encapsulated inside the thin wall matrix in a high-density concentration.

2. (Withdrawn) A thin wall singulation saw blade as set forth in claim 1 wherein said thin wall of said matrix is serpentine or corrugated in shape and having a depth of corrugation which is 3 to 10 times the thickness of said thin walls of said matrix.

3. (Withdrawn) A thin wall singulation saw blade as set forth in claim 2 wherein the cutting area of matrix material in said side walls exceeds the total thin wall transition area between the side walls so that the side walls wear slower than the area between the side walls.

4. (Withdrawn) A thin wall singulation saw blade as set forth in claim 3 wherein the saw blade becomes concave at the cutting edge and the center of the blade becomes recessed between two parallel cutting side wall blades.

5. (Withdrawn) A thin wall singulation saw blade as set forth in claim 2 wherein said saw blade further includes a large circular metal blank, and said matrix material is provided with an adapter portion for connecting the thin wall singulation saw blade to said circular metal blank.

6. (Withdrawn) A thin wall singulation saw blade as set forth in claim 2 wherein said saw blade further includes an endless flexible ribbon, and said matrix material is provided with an adapter portion for connecting the thin wall singulation saw blade to said endless flexible blade.

7. (Withdrawn) A thin wall singulation saw blade as set forth in claim 2 wherein said saw blade further includes a drill rod or pipe, and said matrix material is provided with an adapter portion for connecting a cylindrical thin wall singulation blade to said drill rod or pipe.

8. (Withdrawn) A thin wall singulation saw blade for cutting hard materials, comprising: an inundating or corrugated shaped blade of substantially uniform thin wall

thickness comprising a plated matrix material, large diamonds encapsulated in the thin walls and having small points or protrusions extending from the thin walls on both sides, small diamonds in the thin walls between and around said large diamonds, said small diamonds being encapsulated in higher density by volume than said large diamonds, and the depth of said inundations being greater than the thickness of said thin wall by a ratio of greater than three to one.

9. (Withdrawn) The method of making a thin wall singulation saw blade, comprising the steps of: providing a mandrel having a corrugated shape, plating a uniform thin wall of matrix metal in the presence of large diamonds, initially plating enough matrix metal to entrap and hold the large diamonds in place, substituting small diamonds for large diamonds, plating and encapsulating the small diamonds in the matrix material, ceasing plating of said matrix metal before points or protrusions of the large diamonds are covered, and removing said thin wall corrugated shaped singulation saw blade from said mandrel with points of the large diamonds exposed and protruding through said thin walls.

10. (Withdrawn) The method as set forth in claim 9 wherein the step of plating a uniform thin wall of matrix metal comprises the step of limiting the uniform thickness wall to one third to one tenth of the depth of the corrugated shape.

11. (Withdrawn) The method as set forth in claim 9 which further includes the step of initially plating a copper layer in the presence of diamonds in the range of 50 to 80 microns, and plating the copper layer to a thickness of 5 to 15 microns.

12. (Withdrawn) The method as set forth in claim 11 wherein the step of plating and encapsulating matrix metal comprises plating nickel in the presence of diamonds in the range of 3 to 18 microns, and plating a nickel layer having a thickness less than said large diamonds.

13. (Withdrawn) The method as set forth in claim 9 wherein the step of plating a uniform thick wall of matrix metal comprises the step of plating a corrugated annular ring saw blade for use in a flanged clamping hub.

14. (Withdrawn) The method as set forth in claim 13 which further includes cooling the side walls of said corrugated saw blade with water when cutting.

15. (Withdrawn) The method as set forth in claim 9 which further includes the step of providing an attachment tab or flange on said thin wall saw blade, and attaching said thin wall saw blade to a carrier or support.

16. (Withdrawn) The method as set forth in claim 15 wherein the step of attaching said thin wall saw blade to a carrier comprises attaching the flange to a hub, disc, rod or flexible blade.

17. (Withdrawn) A saw blade for cutting hard materials consisting of:
(a) a matrix for encapsulating large abrasive particles and small abrasive particles in the matrix;
(b) said small abrasive particles being encapsulated inside the matric in a high-density concentration;
(c) the saw blade being corrugated with substantially uniform thickness and comprising raised surfaces and lowered surfaces;
(d) the lowered surfaces being parallel to, and space laterally and longitudinally of, the raised surfaces; and
(e) transition portions connecting the raised surfaces and the lowered surfaces.

18. (Withdrawn) A saw blade as claimed in claim 17, wherein the transition portions are at an angle to the raised surfaces and the lowered surfaces.

19. (Withdrawn) A saw blade as claimed in claim 18), wherein athe angle is 45 degrees.

20. (Withdrawn) A saw blade as claimed in claim 17, wherein the raised surfaces and the lowered surfaces are substantially flat.

21. (Withdrawn) A saw blade as claimed in claim 17, wherein the small abrasive aprticles are a different material than the large abrasive particles.

22. (Withdrawn) A saw blade for cutting hard materials, consisting of:
(a) the saw blade having a corrugated shape of substantially uniform thickness comprising a matrix material;
(b) large abrasive particles encapsulated in the matrix material;
(c) small abrasive particles in the matrix material between and around said large abrasive particles;
(d) said small abrasive articles being encapsulated in higher density by volume than said large abrasive particles;
(e) the corrugated shaped blade comprising raised surfaces and lowered surfaces parallel to, and spaced laterally and longitudinally of, the raised surfaces;
(f) transition portions connecting the raised surfaces and the lowered surfaces; and
(g) the depth of said corrugation being greater than the thickness of said corrugated shaped blade by a ration of greater then three to one.

23. (Withdrawn) A method of making a thin wall singulation saw blade, comprising:
(a) providing a mandrel having a corrugated shape;
(b) plating a uniform thin wall of matrix metal in the presence of large diamonds
(c) initially plating enough matrix metal to entrap and hold the large diamonds in place;

(d) substituting small diamonds for large diamonds;
(e) plating and encapsulating the small diamonds in the matrix material;
(f) ceasing plating of said matrix material; and
(g) removing said thin wall corrugated shaped singulation saw blade from said mandrel.

24. (New) An abrasive impregnated cutting saw comprising:

a thin-wall corrugated sheet metal formed with a plurality of raised portions and an equal plurality of recessed portions, with each raised portion alternating with a recessed portion, the raised and recessed portions are substantially parallel and are connected by transition portions so that distance between the raised and recessed portions define a corrugation depth;

abrasive impregnated metal is electro-deposited on the corrugated sheet metal to form a base layer; and

second abrasive impregnated metal is deposited on the base layer of abrasive impregnated metal deposit with the size of the second abrasive particle ranging from about 10-30% that of the base abrasive particle size such that the second metal deposit fills the valleys formed by the base abrasive particles so that most of the base abrasive particles project out of the thickness of the second metal deposit and the distance between projected tips of the base abrasive particles on the raised and recessed portions defines the kerf thickness.

25. (New) An abrasive impregnated cutting saw according to claim 24, wherein some of the transition portions connecting two adjacent raised and recessed portions are further formed into one or more steps that are parallel to the raised or recessed portion.

26. (New) An abrasive impregnated cutting saw according to claim 24, wherein some of the raised and recessed portions are depressed or the portions are partially raised or recessed to form one or more steps that are parallel to the raised or recessed portion, the distance between said depressed or partially raised and recessed steps is less than the corrugation depth.

27. (New) An abrasive impregnated cutting saw according to claim 24, wherein the base abrasive particles project out of the metal deposit by about 3-5 microns.

28. (New) An abrasive impregnated cutting saw according to claim 24, wherein the saw is formed with the following cutting edge: circular, annular, round or straight.

29. (New) An abrasive impregnated cutting saw according to claim 28, wherein the circular, annular or straight saw has flat raised and recessed portions.

30. (New) An abrasive impregnated cutting saw according to claim 29, wherein the circular or annular saw is used for semiconductor wafer dicing and provides a kerf thickness of about 25-300 microns with a corresponding corrugated metal wall thickness of about 5-80 microns.

31. (New) An abrasive impregnated cutting saw according to claim 30, wherein the base abrasive size is diamond of about 30-50 microns and metal deposit is nickel, said cutting saw provides a dry cutting speed of about 450 mm per second and a cutting life of more than 5000 m.

32. (New) An abrasive impregnated cutting saw according to claim 30, wherein the circular saw comprises a centre hole, a periphery of said centre hole forming a clamping zone and a corresponding area of the cutting saw has each recessed portion being formed from the rear, with respect to the recessed portions, with a notch such that the notches form a concentric circle and the notches are level with the raised portions.

33. (New) An abrasive impregnated cutting saw according to claim 32, wherein adjacent notches are spaced radially to form two or more concentric circles.

34. (New) An abrasive impregnated cutting saw according to claim 28, wherein the annular saw is supported on a metal blank.

35. (New) An abrasive impregnated cutting saw according to claim 28, wherein the round saw forms a core drill, and the raised portions are concentric and define an outer cutting edge whilst the recessed portions are concentric and define an inner cutting edge.

36. (New) An abrasive impregnated cutting saw according to claim 28, wherein the straight saw forms part of a band saw.

37. (New) A cutting process using the abrasive impregnated cutting saw according to claim 25, said cutting process comprising:

running the cutting saw relatively on a substrate with each cutter's surface of revolution substantially perpendicular to the substrate, such that the abrasives in the raised portions, recessed portions and steps project out of each relevant portion/step to form two or more cutting regions so that the abrasives projecting out of the connecting portions between adjacent raised or recessed portions and step(s) experience a balance of cutting force and wear rate, said balance of cutting force and wear rate giving the cutting edge a substantially square profile.

38. (New) A cutting process using the abrasive impregnated cutting saw according to claim 26, said cutting process comprising:

running the cutting saw relatively on a substrate with each cutter's surface of revolution substantially perpendicular to the substrate, such that the abrasives in the raised portions, recessed portions and depressed portions project out of each respective portion to form two or more cutting regions so that the abrasives projecting out of the connecting portions between adjacent raised/recessed portions and depressed portions experience a balance of cutting force and wear rate, said balance of cutting force and wear rate giving the cutting edge a substantially square profile.